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Horses

by Steven Otfinoski

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by **Steven Otfinoski**

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New York

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for his expert reading of this manuscript.

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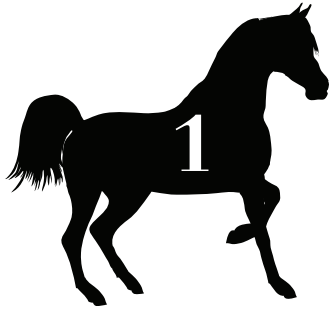
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Freedom on Four Legs

Have you ever watched a horse running? Its four legs pump up and down as it races across a grassy meadow. Its big nostrils flare out, and its long mane and tail fly in the wind. Its whole body expresses the joy of freedom. This joy has inspired humans' admiration and love of horses for the past six thousand years. During most of that time, horses were the most important means of transportation for people. Horses also helped people perform many types of work, from carrying supplies to planting crops. Today, horses are rarely used for work in most modern countries. People keep them as pets and for use in sports and recreation.

Horses are known for being strong, fast animals.

A horse-drawn carriage was a popular method of transportation for hundreds of years. This image, taken from a Carriage and Horse festival, shows how people traveled in the past.



Horses have been around for about 55 million years. The first horse, called the dawn horse, was very small. It looked more like a dog than a modern horse. It first appeared in the areas that became Europe and North America. Over millions of years, as horses *evolved*, they grew bigger and gained longer legs. By the last ice age, which began about 70,000 years ago, horses roamed every continent except Australia. By the end of the last ice age, about 10,000 years ago, the horse had disappeared from the Western Hemisphere. Nobody knows why. Horses were not reintroduced to the Americas until the arrival of Spanish explorers and settlers in the 1500s.

There are hundreds of *breeds* of horses today. They fall into four categories: heavy horses, light horses, *ponies*, and wild horses. There is only one species of wild horse left in the world—Przewalski's horse. So-called “wild horses” found in the American West, Canada, and other places are actually the descendants of *domestic* horses that escaped from humans. In the Western states, these horses are usually called *mustangs*. It is more accurate to call mustangs *feral* horses, rather than wild horses.



These wild horses, all mustangs, take a break from grazing and rest their heads on each other.

Did You Know . . .

The dawn horse's scientific name is *Eohippus*. It comes from the Greek word *hippus*, meaning “horse.” The hippopotamus is not related to the horse. The word *hippopotamus* means “river horse” in Greek. The ancient Greeks compared hippos to horses because of the animals' size and strength.

Species Chart

- ◆ The shire is the largest and strongest living horse. It is a member of the heavy horse class. A shire can measure more than 68 inches (170 centimeters) in height and weigh more than 2,000 pounds (910 kilograms). First bred in England, it has been an important workhorse for centuries. A shire once pulled a load of 32.5 tons.

A shire horse.





A Thoroughbred horse.

- ◆ The Thoroughbred is a type of light horse. It can grow to the height of a shire, but it weighs about half as much. Thoroughbreds were first bred from Arabian horses, which are strong and known for their endurance. Thoroughbreds are primarily raised for racing and other sporting events. They are the fastest horses, running up to 40 miles (65 kilometers) per hour for distances up to 1 mile (1.6 km).

- ◆ The Shetland pony is one of the world's smallest horses. It got its name from its original home, Scotland's Shetland Islands. The Shetland is about 32 to 46 inches (80 to 120 cm) in height. It has a stocky build, slender legs, and a silky tail and mane. Shetland ponies were once used to pull coal carts in British mines. Today they are popular pets for children.

*A Shetland pony and
her foal.*





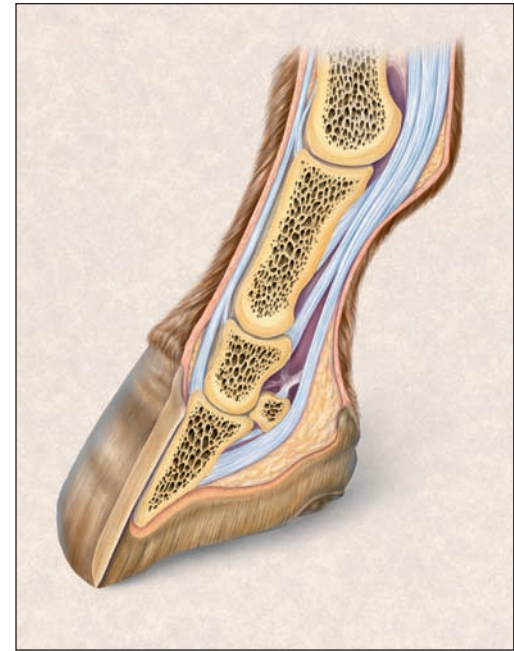
A Przewalski's horse.

- ◆ Przewalski's horse is the only surviving wild horse breed. It stands 48 to 56 inches (122 to 142 cm) in height at the shoulder. It has a tan to reddish-brown coat and a brown mane and looks like a donkey. The Russian explorer Alexander Przewalski discovered bones of this horse in the 1800s. In the wild, Przewalski's horse is found only in Mongolia. Many more live in zoos around the world.

Horses are *mammals* that share certain features. They all have four long legs, a coat of hair covering their entire body, a long head, a mane, and a full tail.

A horse's legs were made for running. The big muscles of its upper legs help the horse to run fast. The rest of a horse's leg is very different from a human leg. A horse's foot bones extend from its hoof almost halfway up its leg.

Early horses had as many as four toes, but the modern horse has only one toe, which is covered by its hoof. When it walks or runs, it is actually on tiptoe. The hoof protects the toe. It is made of the same hard substance as human fingernails. A hoof needs extra protection when the horse walks on a hard surface like a paved road. That is why people put metal horseshoes onto the bottom of the hoof. This does not hurt the horse.



A cross-sectional illustration shows the bones that make up a horse's hoof.

The horse's knee and its ankle and heel—called the *hock*—are located at the mid-leg joint. The knees are on the front legs, and the hocks are on the hind legs. The horse's hip is located higher still, in the trunk of its body.

Most horses move at four different rhythms, called *gaits*. The slowest gait is the walk, in which the horse lifts each hoof separately in a four-beat rhythm. In the two-beat *trot*, which is a little faster, the horse lifts its right forefoot and left hind foot together, then lifts



This palomino Gypsy Vanner horse is trotting across a meadow. Its opposite forefoot and hind foot are raised at the same time in a trot.

its left forefoot and right hind foot together as the first pair of feet hits the ground. In the three-beat *canter*, one hind foot strikes the ground; the other hind foot and the opposite forefoot hit the ground at the same time; and the other forefoot strikes the ground. The *gallop*, also called the run, is the fastest gait. At some moments, all four hooves are lifted off the ground at once.

Horses have highly developed senses. Their eyes are the second largest among land animals. Only ostriches have bigger eyes. Horses' eyes are located on

*These Arabian horses
give each other a sniff
to gather their scent.*



either side of their heads. This means they can see their surroundings without turning their heads. Horses do, however, have two blind spots. One is directly in front of the nose. For this reason, you should never approach a horse directly from the front. You could frighten it and cause it to run away. The other blind spot is behind their rear feet. Approach the horse from the side so it can clearly see you.

A horse hears with its pointed ears. It can move the ears independently in several directions to focus on different sounds at the same time. A horse can hear sounds that humans cannot hear, such as an approaching storm or earthquake.

The horse also has a keen sense of smell. It can smell another horse or enemy up to a mile away. A female horse can pick out its young from a group by smell. When two horses meet for the first time, they sniff each other to get their scent. When the horses meet again, they will recognize each other.

A horse's skin is very sensitive to touch. It can feel the tiniest insect landing on a single hair and will brush the bug away with its tail. Horses have a keen sense of taste, too. They can usually tell if a plant is poisonous, and they will not swallow it.





A Sociable Animal

Horses are *herbivores*. That means they eat only plants and plant material. Their main foods are grass and hay. A horse's favorite way to eat is to *graze*, pulling up grass and eating it in fields and pastures. An average horse weighing about 1,000 pounds (455 kg) eats between 15 and 25 pounds (7 and 11 kg) of food each day. The same horse drinks between 10 and 12 gallons (38 and 45 liters) of water per day.

A horse's teeth are specially adapted to grazing. Twelve *incisors* in the front of its mouth bite off the grass. The grass then passes to twenty-four *molars* in the back of the horse's mouth. These teeth chew and grind the grass before it gets swallowed. This grinding gradually wears down the molars. A knowledgeable

Horses graze for food for a good portion of their day.

person can approximate a horse's age by looking at how worn down its teeth are.

Horses are among the lightest sleepers in the animal world. In an average twenty-four-hour period, most adult horses sleep only about three hours. Baby horses sleep half the day until they are about three months old. Some horses sleep only at night, while others sleep during the day as well. A horse's sleep time does not take place all at once. It generally goes into a deep sleep for no more than fifteen minutes at a time. Horses usually sleep standing up. Their leg joints lock in, so there is no danger that they will fall over when they snooze.

A horse sleeps standing up for several reasons. First, lying down and getting back up are difficult for such a big animal. Also, horses are conditioned to be on the watch for *predators*. They remain alert when standing and are ready to run if an enemy approaches.

Whether sleeping or eating, horses like to be around other horses. They are very sociable animals. In the wild, they live in small groups called *bands* or herds. Each band is led by a male horse which is called a *stallion*. The stallion watches over several *mares* (female horses), their young, and other



This view of a horse's mouth shows its front incisors, which bite the grass it grazes on.

*As part of grooming
each other, horses will
use their teeth to bite
off any insects or dirt
on another horse.*



stallions. He protects them from attacks from predators or an outsider stallion that wants to take over the band.

One way horses socialize with each other is by *grooming*. Two horses stand head-to-head and pick insects and dirt off each other with their teeth. They often start with the neck and work along the body to the tail. Then they might change sides to groom the other side.

Domestic horses may not have the opportunity to live with other horses. In this case, they usually make friends with humans or other animals, such as cats, dogs, or goats.

Horses communicate through a number of sounds. A *nicker* is a gentle, low sound that a horse makes as a greeting to another horse or to a human. When a horse snorts, it exhales air through its nose. This loud sound can be a way to warn other horses of approaching danger. A squeal is a high-pitched, loud sound. Two horses may squeal at each other as a warning before fighting. Sometimes the louder squealer wins the fight without any actual violence.

Did You Know . . .

Horses have an unexplained fear of some smells, such as the odor of pigs.

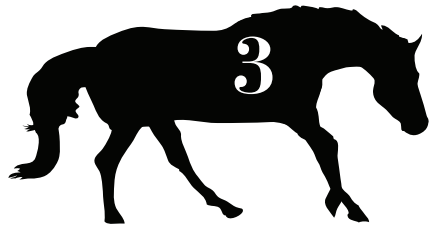


A horse's neigh is one of the sounds it makes to talk to other horses.

The *whinny*, or neigh, is the loudest horse sound. A horse that is lost or separated from its band whinnies to let its companions know where it is. When the horse hears a return whinny, it follows the direction of the sound to find the band.

Horses also use body language to communicate. A horse that stamps its front feet is impatient or restless. A horse with its ears pointed up is alert, curious, or focused. Watch out when a horse swishes its tail. It may be angry or upset and about to kick you! On the other hand, it also swishes its tail to get rid of flies or other insects.





Mares, Stallions, and Foals

Springtime is the mating season for most horses, wild and domestic. A stallion prances and shows off for an attractive mare. If she is interested and ready to mate, the two horses sniff each other. After mating, a wild stallion continues to protect the mare and her *foal* as part of his band.

Humans often bring domestic mares and stallions together only briefly at a *breeding farm*. The farm owners carefully select each mate in order to produce valuable offspring. For example, if the stallion is a great racehorse, breeders hope that his foal will grow up to be a fast racer too.

During mating season, stallions may fight each other in order to establish which is the dominant male. The winning stallion will claim a mare as his and mate with her.

A mare carries her baby for about eleven months, although some pregnancies last as long as fourteen months. If the mare is in a band, she most likely goes off by herself to give birth in a quiet place. She lies down on her side. The birthing process is quick, and the foal normally comes out with its front feet first. The head is tucked between the front feet. Once the foal is born, the mare gets up and starts to lick her newborn to clean it. Usually only one foal is produced. In rare cases, there are twins. A male foal is called a *colt*. A female foal is a *filly*.

Did You Know . . .

The oldest recorded horse in modern times was Sugar Puff, a pony that lived to age fifty-six.

A healthy foal wastes no time getting on its feet. Within an hour and a half, it is able to stand and walk on its long, skinny legs. Within three hours, the foal can trot and gallop. A few hours after that, the mother takes her foal back to the band to play with the other foals.

As the weeks and months pass, the new foal's body catches up in size with its long legs. On breeding farms, the foal is *weaned*—put on adult food and taken from its mother—at about six months. Its owner puts the foal in a pasture with other foals



*This foal has just been
born and is being
cleaned by
its mother.*



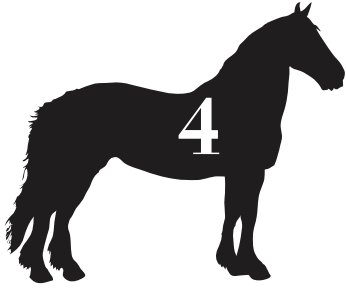
This newborn foal is trying to stand up for the first time. It can stand on its own within an hour or so after being born.

and may begin to train it as a racehorse or a pet. People do not begin to ride a horse until it is at least two years old.

A mare often mates again right after her foal is born. Most mares produce five or six foals in their lifetime, although some have as many as nineteen foals.

Most horses live between twenty-five and thirty years. However, some miniature horses live to the age of fifty or even older.





Fight or Flight

If horses seem skittish to you, there is a good reason. Horses are *prey* animals. In the wild, predators have always hunted horses. By staying alert to danger, horses have managed to survive for many thousands of years.

Today, most domesticated horses are protected by people. They have little to fear from predators, although wolves and mountain lions still attack mustangs in the American West. A mustang usually flees at the first sign of a predator. However, sometimes the horse has nowhere to run, or its foals are threatened. At that point the horse stands its ground and fights.

One of a horse's greatest enemies is the wolf. Horses are attacked in the wild mainly by wolves and mountain lions hunting for food.

It kicks at and stomps on the predator with its hooves or bites the predator with its teeth.

Sometimes horses become their own enemies. For example, two stallions in the wild might fight over a mare. The two horses rear up on their hind legs and strike each other with their hooves. They also try to

Did You Know . . .

The word *mustang* comes from the Spanish word *mesteño*, meaning “stray” or “wild.”

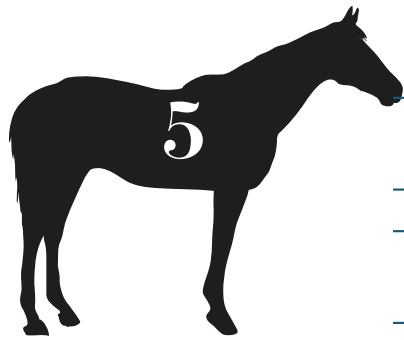


When young stallions fight, they use all the weapons they have. A back kick with their hooves is one of their strongest moves.

bite each other on the neck. In the end, one stallion gives up and flees—but the fight can be bloody. Some stallions bear many scars on their bodies to prove it.

Humans have protected domestic horses from many of these natural dangers.





Horses and Humans

People used to rely heavily on horses for transportation, farm work, and industry. In the United States and many other countries, those days ended with the introduction of automobiles, trains, and airplanes. Some police officers still ride horses while they are working, and cowboys use horses to herd cattle. In less-developed parts of the world, many people still use horses to get around, to plow fields, and to carry heavy loads.

In the United States today, most horses are pets or competitors in horse races, rodeos, horse shows, and sports such as polo. Horses help people in less common ways as well. *Hippotherapy* is the use of horses to help people with various medical problems. Riding

Horses are used in many ways. In California, as in many other places, some police officers get around town on horseback.

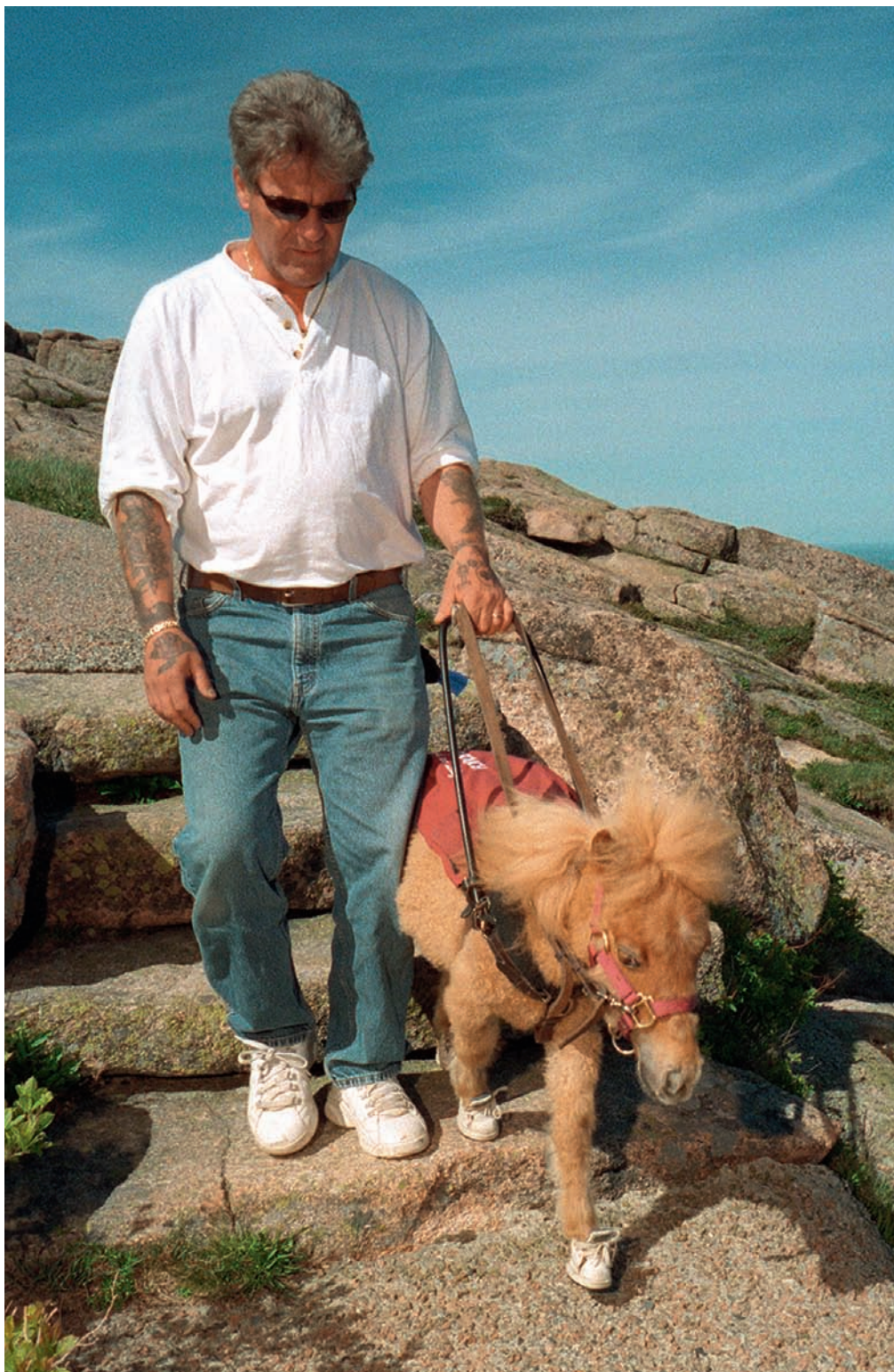
a horse helps strengthen the muscles of a disabled person who cannot walk or move in a certain way. Riding and relating to a horse can also help people who have psychological problems. Learning to trust and befriend a horse can help people deal with stress, overcome fear, and get along better with other people.

Did You Know . . .

There are more than 8 million horses in China, more than in any other country. Other countries with large horse populations are Mexico, Brazil, the United States, and Argentina.



Many horses are kept as pets, as they make great companions for people.



Horses are helpful in many ways. This miniature horse is used to guide its blind owner around, just like a Seeing Eye dog would.

Hippotherapy has been used even in prisons. In one program, prisoners in several states have volunteered to retrain former racehorses or mustangs as domestic pets. The prisoners learn responsibility and friendship by working with the horses. Once the horse is retrained, it is adopted by a family.

Wild mustangs have not always been treated so well in the western United States. For many years ranchers have seen these feral horses as pests. Mustangs eat the grass that is meant for the ranchers' horses and cattle. In the 1960s, ranchers and other people killed more than one million mustangs. Then they sold the dead horses to companies that used their meat in dog food.

By 1970 there were fewer than ten thousand mustangs left in the United States. They had become *endangered*. The following year, Congress passed a law that made the capture, hunting, and killing of mustangs illegal. Today, there are about 25,000 mustangs in the West. More than half of them live in the state of Nevada.

The problem of limited land remains, however. Adoption programs for mustangs help to remove them from ranchers' grazing land. The government



Wild horses roam free at this refuge on the border of Wyoming and Montana.

has also bought land to be used as *refuges* for mustangs. These refuges protect the horses and keep them isolated. However, people are still unsure about how to deal with the growing numbers of feral horses.

Another recently endangered horse is Przewalski's horse. For centuries, people in Mongolia hunted this wild horse for its meat. By 1968, Przewalski's horse



Horses are exciting performers to watch in various equestrian events.

was considered *extinct* in the wild. The only remaining horses lived in zoos. Then Mongolians began to take horses from zoos and reintroduce them into the wild. Their numbers began to grow again. In 2005, there were about 250 Przewalski's horses living in the wild in Mongolia with more than 1,200 still in zoos around the world.

Whether they are running free in a sun-drenched canyon, dashing around a racetrack to the cheers of spectators, or carrying a young rider across a grassy field, horses remain some of the most beloved and inspiring of animals.

Glossary

bands—Groups of horses living together in the wild.

breeds—Particular types of domestic animals.

breeding farm—A farm where mares and stallions are brought together to mate and produce offspring.

canter—A three-beat gait, slower than a gallop.

colt—A male foal.

domestic—Made suitable for life and work near humans; tame.

endangered—Threatened by extinction.

evolved—To change over time in a way that promotes survival.

extinct—No longer in existence; died out.

feral—Once tame, but going back to a wild state.

filly—A female foal.

foal—A baby horse.

gaits—Particular patterns of movement in animals.

gallop—A fast, four-beat run.

graze—To feed on grass and other plants in pastures and fields.

grooming—The removal of dirt and insects from an animal's coat and skin.

herbivores—Animals that eat only plants or plant materials.

hippotherapy—The use of horses and horseback riding to help humans with physical and mental problems.

hock—A heel joint in a horse's hind leg.

incisors—Front teeth used for cutting.

mammals—Warm-blooded animals that have hair and nurse their young with milk.

mares—Female horses that are more than four years old.

molars—Broad back teeth used for grinding food.

mustang—A feral horse found in the American and Canadian West.

nicker—The friendly sound a horse makes to greet another horse or a person.

pony—A small type of horse.

predators—Animals that hunt and eat other animals.

prey—Animals that are hunted and eaten by other animals.

refuges—Areas of land set aside to protect wild animals.

stallion—A male horse that is more than four years old.

trot—A slow, two-beat gait, faster than a walk.

weaned—Taken from a nursing mother to begin eating as an adult.

whinny—The sound a horse makes when it is lost, distressed, or trying to locate a companion.

Find Out More

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<http://horsefun.com/>

The Horse Lover's Corral
<http://www.angelfire.com/tx2/kidshorses/index3.html>

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<http://www.pbs.org/wnet/nature/horses>

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Steven Otfinoski is the author of numerous books about animals. He has written *Koalas*, *Sea Horses*, *Alligators*, and *Hummingbirds* in the Animals Animals series. Otfinoski lives in Connecticut with his wife, a high school teacher and editor.